Current Problems in Cardiology
Volume 46, Issue 3, March 2021, 100674

Improving Door-to-Balloon Time for Patients With Acute ST-Elevation Myocardial Infarction: A Controlled Clinical Trial

Peyman Namdar[1], Leili YekeFallah[2], Fatemeh Jalalian[3], Ameneh Barikani[4], AliRaza ghpoor[5]

[1] Emergency medicine specialist, Assistant Professor, Department of Emergency Medicine, Metabolic Disease Research Center, Qazvin University of Medical Science, Qazvin, Iran
[2] Associate Professor, PhD of Nursing, Metabolic Disease Research Center, and School of Nursing & Midwifery, Qazvin University of Medical Science, Qazvin, Iran
[3] M.Sc. of Intensive Care Nursing, School of Nursing & Midwifery, Qazvin University of Medical Sciences, Qazvin, Iran
[4] Social Medicine Specialist and Assistant Professor of Statistics, Qazvin University of Medical Sciences, Qazvin, Iran
[5] B.Sc. student. of Nursing, Student Research Committee, Qazvin University of Medical Sciences, Qazvin, Iran

Abstract

According to the latest guidelines, the best intervention to restore blood flow through occluded coronary arteries is angioplasty at a time less than 90 minutes. Thereby, the present study was conducted to determine the impact of implementing ST-elevation myocardial infarction (STEMI) code on door-to-balloon time in patients with ST-segment elevation myocardial infarction. This clinical trial was conducted in 2019 at Booali Sina heart center hospital in Qazvin, Iran, in 2019. Fifty-eight patients with STEMI were purposively and consecutively enrolled in the study. Patients were then divided into control and intervention groups, based on their referral period. In both groups, patients were observed since their Arrived by emergency medical services to emergency department until inflating the balloon in the occluded coronary artery, and the intended times were recorded by the researchers. For Participants in the intervention group the "STEMI code" was designed and activated by an emergency physician once there is a patient experiencing a chest pain and early confirmed as a myocardial infarction. The SPSS program (v. 16) was used for data analysis at a significance level of less than 0.05. The difference in the door-to-balloon mean time in both control (113.5 ± 43.6 minutes) and intervention (79.3 ± 27.4 minutes) groups, was statistically significant ($P = 0.001$). Regarding other parameters, the reduction in the mean between Cath lab time (26.2 ± 18.2 minutes) and balloon time (15.5 ± 7.8 minutes) was also statistically significant ($P = 0.008$). In this study, implementation of the "STEMI code" could greatly prevent parallel work and squandering time while treating patients with acute myocardial infarction. As the door-to-balloon time gets shorter, the bed occupancy rate in the emergency department had reduced which in turn allowed more patients to be admitted.